

AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A liquid dispensing system for dispensing liquid drops on the order of nanoliter quantities with a number of dispensers arranged in parallel for dispensing liquid on a surface at the same time, the dispensing system including a printhead for holding the liquid dispensers, a bracket for removable connection to the printhead, and a semi-kinematic mounting system between the printhead and the bracket, wherein the mounting system ~~is non-adjustable and~~ includes three hardened ball mounts rigidly mounted on one or both of the bracket and printhead, wherein each of the ball mounts contacts two linear hardened dowel pins to constrain the printhead with respect to the bracket in six degrees of freedom, such that if the ball mount is on one of the bracket or printhead, the dowel pins fit in dowel pin holes in the other of the printhead or the bracket, wherein one set of the dowel pins is substantially orthogonal to at least one of the other two sets of dowel pins, wherein, after initial placement on the bracket, the printhead can be removed and replaced without requiring further calibration.

2. (Original) The dispensing system of claim 1, wherein the system includes a microarray spotter.

3. (Canceled)

4. (Previously Presented) The system of claim 1, wherein the printhead has a region with openings for dispensers, wherein the ball mounts surround the region.

5. (Original) The system of claim 4, wherein the region has openings along an x-direction and a y-direction, and wherein the spacing between the mounts in the x-direction and the y-direction is larger than the dimensions of the region along the x-direction and the y-direction.

6. (Canceled)

7. (Original) The system of claim 2, wherein the positional repeatability error from subsequent mounting and replacing is less than 50 μm and/or 5 milliradian.

8. (Original) The system of claim 7, wherein the positional repeatability error from subsequent mounting and replacing is less than 2 microns and/or 0.13 milliradian.

9. (Previously Presented) The system of claim 1, wherein at least one of the mounts has an opening for receiving a screw passing between the bracket to the printhead.

10. (Original) The system of claim 1, further comprising a positioning system connected to the bracket, and a controller for controlling the positioning system to move along three coordinate axes.

11. (Original) The system of claim 2, further comprising a positioning system connected to the bracket, and a controller for controlling the positioning system to move along three coordinate axes.

12. (Original) The system of claim 1, wherein the positional repeatability error from subsequent mounting and replacing is less than 50 μm and/or 5 milliradian.

13. (Original) The system of claim 12, wherein the positional repeatability error from subsequent mounting and replacing is less than 2 microns and/or 0.13 milliradian.

14. (Currently Amended) A microarray spotter including a printhead, a bracket, and a semi-kinematic mounting system between the printhead and the bracket, the mounting system being sufficiently precise to provide repeatable accuracy within 50 microns along the three translational axes, wherein the mounting system ~~is non-adjustable and~~ includes three hardened ball mounts rigidly mounted on one or both of the bracket and printhead, wherein each of the ball mounts contacts two linear, hardened dowel pins fit in one or both of the bracket and printhead to constrain the printhead with respect to the bracket in six degrees of freedom, wherein, after initial placement on the bracket, the printhead can be removed and replaced without requiring further calibration.

15. (Original) The microarray spotter of claim 14, wherein the repeatable accuracy is within 2 microns along the three translational axes.

16. (Canceled)

17. (Currently Amended) A microarray spotter including a printhead, a bracket, and a semi-kinematic mounting system between the printhead and the bracket, the printhead for holding dispensers for dispensing liquid onto an array with wells no more than about 9mm apart,

the mounting system ~~being non-adjustable and~~ including three ball mounts in one of the printhead or bracket, each ball mount contacting two dowel pins in the other of the printhead or bracket to constrain the printhead with respect to the bracket in six degrees of freedom to ~~providing~~ provide sufficient locational accuracy so that the printhead can be repeatedly removed and replaced from the bracket without requiring further calibration.

18. (Original) The microarray spotter of claim 17, wherein the wells are no more than about 4.5 mm apart.